

REMARKS

All of the pending claims 1-20 were rejected for obviousness under 35 USC §103(a) based on U.S. patent 5,038,910 to Lassiter et al.

Prior to discussing Lassiter et al it may be helpful to emphasize some of the features of applicants' claimed invention that are believed to be patentably novel.

Applicants' invention is for a method and device for transporting articles of different size, weight, material and shape to predetermined delivery locations. Each article is transported in a single transport container and different articles are simultaneously transported in individual transport containers. Each transported article is identified in connection with the container that transports the article. Article identification is carried out by a detector device that detects one or more parameters of the transported article such as its color, shape, weight, material, etc.

A camera mounted above a transport path of the device cooperates with an article recognition means to establish that the individual transport containers contain just one article. The camera also establishes, among other observable features detectable by a television, that the transport container is emptied at a predetermined article delivery location, that the article is an acceptable article according to predetermined acceptable parameters, and that the article is in a unitary state.

Applicants' device also includes actuating means provided at a plurality of delivery locations that can be selectively actuated to cause removal of an identified article from its transport container at a designated delivery location.

However when an article is at one of several delivery locations that is not the designated delivery location for the identified article the

actuating means will not actuate the transport container to cause removal of the identified article from the container. Applicants' device is thus capable of discriminating as to whether or not a container should be emptied at a particular delivery location.

Applicants' device further includes discharging means that cause the transport container to rotate through a 360° angle about an axis of rotation to discharge the article from its transport container.

Lassiter et al, the sole patent relied on by the examiner to reject applicants' claims, shows a bucket distribution system for transporting loose, fragile products in a transport bucket to distribution stations and discharging a select amount of the loose product at the distribution station.

The Lassiter et al system is used for food products such as crackers or other bakery goods that await packaging (column 5, lines 24-28). Thus Lassiter et al provides vibratory feeders such as 54a, 54b, 54c, and 54d that receive products from the buckets and cause a vibration to ensure that such loose products are fed to a packaging machine (column 5, lines 38-41).

A particularly noteworthy feature of Lassiter et al is that the buckets 44, have edges with oppositely disposed overlapping lips 94, 96. Thus there is no space between adjacent buckets 44 during horizontal series movement as shown in Fig. 8.

It appears that the bucket overlap helps prevent loose products 60 from spilling between adjacent buckets as the buckets pass underneath the discharge end 49 of the vibratory feeder 48 (Fig. 8) as described at column 7, line 51 to column 8 line 13. Thus the overlapping bucket lips 94, 96 as shown in Fig. 9 essentially provide a spill-proof seal between buckets.

Lassiter et al describes at column 8, lines 14-62, that discharge of the loose product 60 from the bucket 44 is accomplished by rotating the bucket approximately 90° such as shown in Fig. 9. However the examiner,

at page 3 of the Office Action, infers that Lassiter et al, during the course of emptying a bucket 44 rotates the bucket through a 360° angle.

Applicants' respectfully submit that the examiner's inference is incorrect because any rotation of the Lassiter et al bucket beyond 180° would cause the overlapping lips 94, 96 of the rotating bucket to interfere with corresponding lips 94, 96 of adjacent buckets. Therefore, applicants' further submit that Lassiter et al cannot logically suggest 360° rotation of a transport bucket.

With regard to the claims, applicants' method claim 1 requires,

“identifying each article...material prior to placing...identified articles one by one in...respective...containers...providing television camera inspection of the articles one by one...to establish that just one article is...in a...dedicated transport container, and causing the respective article at its designated delivery location to be discharged...under...gravity or with ...controlled actuating means.”

Applicants' claim 1 thus requires placement of one article only in a dedicated transport container, identification of the article, followed by television inspection to establish that just one article is present in a transport container, and causing the article at its delivery location to be discharged either by gravity or via a separate actuating means.

In comparison Lassiter et al shows a device where a receiving bucket receives numerous loose items of a particular product such as crackers or other bakery products. There is no showing or suggestion in Lassiter et al of one single article for one single transport container. There is no showing or suggestion in Lassiter et al of a televised inspection of articles in a container to confirm that just one article is present in one container.

The only detector shown by Lassiter et al is a photo detector 51 that detects the reflection of light from the loose products 60 (column 1, lines

28-30). Such photo detector is not capable establishing how many articles are placed in one transport container but provides a detection signal indicating that something is in the container. Furthermore Lassiter et al does not identify the product material but only the presence of product in a bucket.

Lassiter et al also shows a proximity switch 55 to detect when each of the buckets 44 has passed the switch 55. However such proximity switch 55 is not an identifying means and is not an article inspection means as required in applicants' claim 1. Accordingly it is submitted that claim 1 is allowable and allowance thereof is respectfully requested.

Claims 2 and 5-10 which directly or indirectly depend on claim 1 are likewise submitted as allowable for the reasons supporting allowance of claim 1 as well the distinctions defined in claims 2 and 5-10. Allowance of claims 2 and 5-10 is respectfully requested.

Independent method claim 3 requires

“...identifying each article...material prior to placing...identified articles one by one in...respective...containers...discharging the...article...from its transport container...by inverting the transport container in the course of rotating...through an angle of 360°...to discharge the single article from the container under...gravity.”

Claim 3 thus requires article identification on a one by one basis and discharge of the article from its container by rotating the container 360°.

As previously pointed out Lassiter et al cannot rotate the transport buckets 360° because any rotation that approaches 180° would cause interference between adjacent buckets. It is thus submitted that Lassiter et al does not show or suggest the requirements of claim 3. Allowance of claim 3 is thus respectfully requested.

Independent method claim 4 requires

“...placing identified articles one by one in...respective...containers, discharging the...article...from its transport container...by inverting the transport container in the course of rotating the container through an angle of 360° ...to discharge the single article from the container under...gravity...rotation...being controlled by...guide pins on the container, a...controllable guide flap...causing...turning of the container and...one further guide pin on the container in cooperation with...engaging element...causing controlled rotation of the container.”

Claim 4 includes requirements similar to those previously discussed in connection in with claim 3. Allowance of claim 4 is thus respectfully requested for the reasons supporting allowance of claim 3 as well as the additional requirements in claim 4 of container rotation being controlled by guide pins on the container, a controllable guide flap and an engaging element cooperating with a further guide pin to cause controlled rotation of the container. Allowance of claim 4 is thus respectfully requested.

Independent device claim 11 requires

“...a plurality of transport containers...arranged to move in spaced apart relation along a transport path...article recognition means...identifying each article...material prior to...be placed one by one in a...transport container...television camera...to inspect the articles...to establish that just one article is...in a...transport container...actuating means...to cooperate with...transport container...to cause removal of...article from the container at...designated delivery location...actuating means...controllable to be...inactive...to selectively allow a container to pass the delivery location...when a container contains an article not designated for delivery thereat”

Applicants' claim 11 thus requires spaced transport containers, placement of one article only in a dedicated transport container, article identification means, television inspection means to establish that just one article is present in a transport container and selectively activatable means to cause the article at its delivery location to be discharged either by gravity or via a separate actuating means.

As previously discussed Lassiter et al shows a device where a receiving bucket receives numerous loose items of a particular product. There is no showing or suggestion in Lassiter et al of a televised inspection of articles in a container. The Lassiter et al photo detector 51 only detects the reflection of light off the loose products 60 and does not identify the product material but only the presence of loose product in a bucket. The Lassiter et al proximity switch 55 signals when each bucket 44 has passed the switch 55, but is not an identifying means and is not an article inspection means as required in applicants' claim 11. Accordingly it is submitted that claim 11 is allowable and allowance thereof is respectfully requested.

Claims 12 and 15-20 which directly or indirectly depend on claim 11 are likewise submitted as allowable for the reasons supporting allowance of claim 11 as well the distinctions defined in claims 12 and 15-20. Allowance of claims 12 and 15-20 is thus respectfully requested.

Independent device claim 13 requires

“...a plurality of transport containers...arranged to move in spaced apart relation along a transport path...article recognition means...identifying each article...material prior to...be placed one by one in a...transport container...actuating means for discharging...article...from...transport container...causing...transport container to rotate...360° about an axis of rotation to discharge...single article from...container under...gravity.”

Claim 13 thus requires article identification on a one by one basis and discharge of the article from its container by rotating the container 360°.

As previously pointed out Lassiter et al cannot rotate the transport buckets 360° because any rotation that approaches 180° would cause interference between adjacent buckets. It is thus submitted that Lassiter et al does not show or suggest the requirements of claim 13. Allowance of claim 13 is thus respectfully requested.

Independent device claim 14 requires

“...a plurality of transport containers...arranged to move in spaced apart relation along a transport path...article recognition means...identifying each article...material prior to...be placed one by one in a...transport container...actuating means...causing discharging of...article...from...transport container in rotating...container through...360°...to discharge...article from...container under...gravity...container actuating means including...guide pins on...container...a moving guide flap...to cause...turning of the container and...additional guide pin...to cooperate with...engaging element...to effect controlled rotation of the transport container.”

Claim 14 includes requirements similar to those previously discussed in connection in with claim 13. Allowance of claim 14 is thus respectfully requested for the reasons supporting allowance of claim 13 as well as the additional requirements in claim 14 of container rotation being controlled by guide pins on the container, a controllable guide flap and an engaging element cooperating with a further guide pin to cause controlled rotation of the container. Allowance of claim 14 is thus respectfully requested.

In view of the foregoing remarks and amendments it submitted that this application is in condition for allowance and allowance thereof is respectfully requested.

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1092-20-Amendment

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